

## ATTACHMENT 5

Other Issues Related to § 40.13(a)  
and Regulation of NORM

## Other Issues Related to § 40.13(a) and Regulation of NORM

As part of this project, the Part 40 Jurisdictional Working Group (JWG) identified numerous issues related to its activities. These issues include the State perspective and problems with inconsistency involving NRC regulations and the regulation of NORM in general. The JWG believed these issues should be brought to the Commission's attention and are listed below.

### 1. State Perspectives

The State (CRCPD/OAS) representative believes that the States prefer a consistent national framework. However, the State representative indicated that the States have three priorities: (1) adequate protection of public health and safety; (2) emphasis on a consistent Federal framework across the spectrum of issues dealing with radioactive material; and (3) enhancing, not interfering with, State regulatory programs. The States do not want NRC to institute a program that will impede States from doing what they are already doing, or think they should do, to protect public health and safety. With the recommended approach, the States will no longer have a legal impediment to regulate uranium and thorium and can more effectively regulate NORM as a whole. This will allow the States to protect public health and safety and not interfere with current State regulatory programs. The recommended approach will help clarify jurisdictional authorities.

### 2. Inconsistencies in Regulations Involving NRC Regulations and the Regulation of Naturally Occurring Radioactive Material in General

There are problems with inconsistency, both involving NRC regulations and the regulation of naturally occurring radioactive material in general. Numerous questions and issues have been raised related to: (1) the relationship between § 40.13(a) and the License Termination Rule (LTR), (2) regulatory jurisdiction, and (3) transfer of material containing concentrations less than 0.05 percent by weight uranium and thorium.

It should be noted; however, that, in accordance with 10 CFR 40.13(a), if an unlicensed person possesses less than 0.05 percent by weight source material, that person is exempt from regulation or licensing by NRC. At this exemption limit, some calculated scenarios have shown that doses could potentially exceed the unrestricted release criterion in § 20.1402. As a result, this exemption allows a person to possess materials containing concentrations of uranium and thorium under this exemption limit without a license and freely dispose of the material at a concentration level higher than a licensee would be permitted to keep onsite for an unrestricted release under § 20.1402. This results in the inconsistency that a licensee may have to clean up to lower levels than a non-licensee, for what is essentially the same material.

The recommended approach, that only the purposeful use of uranium and thorium will be under NRC jurisdiction, should minimize current inconsistencies within NRC regulations, as well as help clarify jurisdictional authorities. It will be clearer as to when uranium and thorium is licensable by NRC, or whether the uranium and thorium are considered NORM. Section 40.13(a) will likely be eliminated if the recommended approach is implemented; this will make it clearer that current NRC regulations, including the LTR, will continue to apply to licensed uses of uranium and thorium. Issues associated with the statutory provisions of

## Other Issues Related to § 40.13(a) and Regulation of NORM

"unimportant quantities" of source material under Section 62 of the AEA may need to be treated under other NRC regulatory requirements.

### 3. No single definition of the word "ore"

The staff routinely receives questions related to the definition of source material because of the inconsistent use of the word "ore" and/or § 40.13(a). Implementing the recommended approach should save NRC resources resolving these questions. Under the present regulatory scheme, materials with low concentrations of uranium and thorium may be exempt source material or not AEA material, depending on the interpretation of the word "ore." Different interpretations have been used in different contexts; thus, attempting to clarify some of the issues by adopting a specific definition of "ore" in the regulations may have significant impacts on the regulatory program. By regulating only the purposeful use of uranium and thorium, questions related to the definition of source material and ore should be minimized.

### 4. Impediments to other agencies for regulation of the uranium and thorium present with NORM/TENORM

Currently, the States and EPA (two statutes for EPA specifically exclude authority over AEA materials) have limited authority to regulate uranium and thorium that are defined as source material in the AEA. Material that is less than 0.05 percent by weight concentration uranium and thorium and covered under the exemption in § 40.13(a) is still considered AEA material although it is exempt from NRC regulation. However, the States and EPA staff often include doses from these radionuclides when performing dose calculations or when considering regulatory actions for NORM (e.g., radium). Additionally, the States' and EPA's regulation of radium also protects individuals from potential doses from uranium and thorium. The recommended approach will remove the legal impediments the States and EPA now have in regulating uranium and thorium, which should increase public health and safety because the jurisdictional authority will be clearer. The States and EPA could regulate all NORM, instead of just the radium and radon component of the material, if they choose to regulate the material.

### 5. International Agreements of Cooperation

Revising the definition of source material or changing the concentration limit in § 40.13(a) may have an impact on international Agreements of Cooperation that exist or are in the process of being developed or ratified. There are approximately 24 Agreements for Cooperation that the United States has in place at this time. Six of these Agreements currently require the United States to track and report source material subject to these

## Other Issues Related to § 40.13(a) and Regulation of NORM

Agreements<sup>1</sup>. The definitions of source material found in these agreements generally, but not completely, follow the definition in the Atomic Energy Act and reference "such concentration as may be agreed to by..." in essence by both parties of the Agreement.

The U.S. can, and usually does, accept imports of source material under the Agreements for Cooperation if the source material is for nuclear end use. If the import is for a non-nuclear end use, the U.S. can decline the import under the Agreement. However, import for non-nuclear end use is allowed, but is not routinely imported under the specific terms of the Agreement.

Additionally, an Additional Protocol to the U.S.-International Atomic Energy Agency Safeguards Agreement was submitted by the President to the Senate on May 9, 2002, for review and approval. This new treaty, when approved, would require information to be submitted by the U.S. Government to the IAEA regarding source material that has not reached the composition and purity suitable for fuel fabrication or for being isotopically enriched. This protocol would require additional reporting of information on such things as production levels and stockpiles at uranium/thorium mines and concentration plants (such as mills). These types of facilities would not be impacted by the proposed approach; however, the proposed approach could affect the reporting requirements under the proposed protocol if the proposed definition excludes source material covered under the definition of source material in the U.S. - IAEA Safeguards Agreement and Additional Protocol.

Regulating source material based on use (i.e. purposely extracted for the property of the uranium or thorium vs. the uranium or thorium being incidental to the processing of other material of interest), raises the possibility that individuals could possess source material not purposely extracted, but concentrated to greater than 0.05 percent. This could be a proliferation concern. If the individuals were not under NRC jurisdiction, NRC would not be aware of this material and the U.S. would not be able to fully meet reporting requirements under current Agreements of Cooperation for export of material. Note, this is an area where NRC knowledge is already limited.

There are existing requirements under Part 110, § 40.64, and § 150.17 which require reporting on imports or exports of source material if it is 5.0% or more by weight. This requirement would not be affected by the recommended approach. There is another reporting requirement in Part 110, which would need a conforming amendment for consistency with Part 40, if § 40.13(a) is changed.

The proposed new definition of source material would remove rare earth facilities, and other mineral processors, from current reporting requirements, because the uranium and thorium in these materials would no longer be defined as source material. These facilities are

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<sup>1</sup>These six Agreements are between the United States and each of the following:  
1) Australia, 2) Canada, 3) Euratom, 4) People's Republic of China, 5) Japan, and 6) Czech Republic.

## Other Issues Related to § 40.13(a) and Regulation of NORM

currently not required to have a NRC license unless the concentration of any uranium and thorium is greater than 0.05% by weight concentration. Under the recommended approach, these facilities would not require a license since the uranium and thorium are not being extracted purposely for the uranium and thorium content even if the source material were greater than 0.05 percent by weight concentration.

If this waste material was transferred to a facility in another country for source material separation, the U.S. could potentially be in violation of one or more Agreements for Cooperation. The potential for violation would have to be evaluated on a case-by-case basis. However, if the revised definition of source material was adopted, the NRC would no longer have jurisdiction for export licensing of uranium and thorium that is not extracted purposely. Thus, the NRC would be unable to assure that the tracking and reporting of this source material complies with the various Agreements for Cooperation.

There is also a potential proliferation concern if quantities of uranium and thorium are concentrated for purposes other than recovering the source material (e.g., in waste streams), and shipped out of the U.S. The uranium or thorium content in this waste could be recovered and used for undeclared nuclear purposes. We note that the current trend in IAEA safeguards and nonproliferation is to place greater attention on uranium- and thorium-bearing materials that could be used as feed for undeclared nuclear operations.

Revising the definition of source material or § 40.13(a) will need to be coordinated with the State Department, to evaluate any impacts on international Agreements of Cooperation and the proposed model protocol discussed above, if ratified. The recommended approach will involve further coordination with the State Department and possibly the countries holding Agreements of Cooperation that will be impacted by the JWG's recommended approach.

### 6. Impact on sites currently regulated under the AEA

Revising the definition of source material will have an impact on some sites that are currently regulated by the NRC and the Agreement States. There are nine sites on the Site Decommissioning Management Plan (SDMP)/complex sites list, located in the States of PA, OK, MO, and NJ, and one currently operating NRC-licensed facility located in PA, that did not purposely extract uranium and thorium or use extracted uranium and thorium. The facilities were processing ores and slags to extract certain minerals and were regulated by NRC: (1) if the original material processed contained uranium and thorium in concentrations above 0.05 percent by weight, or (2) if, during processing, the uranium and thorium was concentrated in waste streams to concentrations above 0.05 percent by weight. Three of these nine sites on the SDMP/complex sites list are currently expected to complete decommissioning in the next few years, before implementation of any change would be completed.

If the recommended approach is implemented, these sites would no longer be subject to NRC jurisdiction, since NRC authority will be limited to uranium and thorium that is extracted/purposely concentrated for the use of uranium and thorium. It is not clear how the

## Other Issues Related to § 40.13(a) and Regulation of NORM

States, EPA, and other stakeholders (the general public and the affected sites) would react if this recommendation is implemented. Therefore, as part of the staff recommendation, the staff plans to consult with the individual States and EPA to determine their position on this issue, including the possibility of drafting the requested legislative change such that NRC retains jurisdiction over these nine sites on the SDMP/complex sites list. In this consultation process, we could also consider whether the one currently operating NRC-licensed facility should also be retained by NRC, if, at the time of decommissioning, it presents complex decommissioning or decommissioning funding issues.

There are a few additional mineral processors licensed by Agreement States under the AEA. The impact on each of these sites and the regulating States, if any, would depend on whether the State is currently regulating NORM consistently with AEA material under a single radiation program.

### 7. Alternate feed

NRC has a policy on Uranium Recovery facilities. This policy is discussed in NRC Regulatory Issue Summary 2000-23, "Recent Changes to Uranium Recovery Policy." This policy was also noticed in the Federal Register, 60 FR 49296, on September 22, 1995. In reaching its recommendations, the JWG and staff recognizes this policy and does not want to recommend any changes that would jeopardize the current policy. It does not appear that the recommended approach will affect this policy. One of the criteria in the Final Position and Guidance on the Use of Uranium Mill Feed Material Other than Natural Ores states, "Determination of Whether the Ore Is Being Processed Primarily for its Source Material Content." In this criterion, it states that "for the tailings and waste from the proposed processing to qualify as 11e.(2) byproduct material, the ore must be processed primarily for its source material content." The recommendation should not impact this policy since the recommended approach is to limit NRC jurisdiction to the purposeful use or extraction of uranium and thorium.

### 8. FUSRAP sites

Currently, there is some ongoing cleanup work with the U.S. Army Corps of Engineers (ACE) at Formally Utilized Site Remediation Action Plan (FUSRAP) sites. The staff position is that the contaminated tailings material at those sites is "pre-UMTRCA tailings" and not 11e.(2) byproduct material. The ACE has been sending some of this material to disposal sites not licensed by NRC if the uranium and thorium concentration is less than 0.05% by weight. If it is greater than 0.05% by weight, the material is considered source material and the ACE sends the material to a disposal site that authorizes disposal of source material.

The recommended approach may affect FUSRAP sites. If the Commission approves the staff recommendation, to ensure that there will be no impact on the current FUSRAP program, the legislative language will be coordinated with ACE.